became dim, but would soon regain its former brilliancy. The observer states that, by holding up his hands, electric sparks would form on the ends of his fingers, and that his hair and clothing were full of them. A peculiar crackling noise was heard about the anemometer cups; and at the corners of the office building there were continuous sparks of bright light.

Fort Apache, Arizona, 3d.—The anemometer attachments were damaged by atmospheric electricity on this date.

Fort Stockton, Texas.—Telegraphic communication was interrupted by atmospheric electricity at this place on the 1st.

OPTICAL PHENOMENA.

SOLAR HALOS.

Solar halos have been observed in the various districts on the following dates:

New England.—1st, 10th, 12th, 14th, 15th.

Middle Atlantic states.—1st, 8th, 12th to 15th, 18th, 23d, 26th, 27th.

Eastern Gulf.—2d, 14th, 17th, 19th, 27th.

Western Gulf.—5th, 6th, 10th, 13th, 18th, 23d, 26th.

Lower lakes.—1st, 10th, 11th, 15th, 18th, 21st, 23d.

Upper lakes.—8th, 14th, 17th.

Upper Mississippi valley.—3d, 4th, 8th, 9th, 18th, 21st, 23d, 25th.

Solar halos were also reported from the following stations not included in the districts named above:

Oakwood and Poway, California, 7th, 22d; San Francisco, California, 9th, 24th, 26th, 31st; Augusta, Georgia, 13th; Jacksonville, Florida, 24th; Fort Scott, Kansas, 10th; Louisville, Kentucky, 3d; Sunman, Indiana, 8th; Saint Vincent, Minnesota, 28th; Nashville, Tennessee, 31st; DeSoto, Nebraska, 10th, 25th.

LUNAR HALOS.

Lunar halos have been observed in the various districts on the following dates:

Middle Atlantic states.—8th, 12th, 13th, 16th, 18th, 19th, 20th.

South Atlantic states.—13th, 16th to 19th.

Florida peninsula.—9th, 10th, 11th, 16th, 21st.

Eastern Gulf.—16th, 21st, 23d.

Western Gulf.—6th, 10th, 12th to 18th, 21st.

Lower lakes.—12th, 14th, 17th.

Upper lakes.—2d, 11th, 13th, 14th, 19th, 20th.

Upper Mississippi valley.—1st, 11th, 13th, 14th.

Missouri valley.—10th, 17th, 19th.

Lunar halos were also reported from the following stations, not included in the districts named above:

Oakwood, California, 18th; Red Bluff, California, 24th; Fort Grant, Arizona, 9th; Indianapolis, Indiana, 21st; Laconia, Indiana, 14th; Portland and Cornish, Maine, 15th; Boston, Massachusetts, 14th; Knoxville, Tennessee, 22d; Memphis, Tennessee, 15th; Nashville, Tennessee, 10th; Fort Concho, Texas, 10th; Fort Stockton, Texas, 18th.

MIRAGE.

Indianola, Texas, 9th.—During the middle part of the day, the court house and buildings in this city were plainly seen by people in the country, at a distance of from fifteen to sixteen miles. Mirage was also observed on the following dates: 15th, 17th, 18th, 19th, 23d, 31st.

MISCELLANEOUS PHENOMENA.

SUNSETS.

The characteristics of the sky, as indicative of fair or foul weather for the succeeding twenty-four hours, have been observed at all Signal Service stations. Reports from one hundred and forty-five stations show 4,462 observations to have been made, of which nine were reported doubtful; of the remainder, 4,453, there were 3,795, or 85.2 per cent., followed by the expected weather.

SUN SPOTS.

The following record of sun spots for the month of August, 1883, has been forwarded by Professor D. P. Todd, Director of the Lawrence Observatory, Amherst, Massachusetts:

Date—Aug., 1883.	No. of new		Disappeared by solar rotation.		Reappeared by solar rotation.		Total No. visible.		Remarks.
	Gr'ps	Spots	Gr'ps	Spots	Gr'ps	Spots	Gr'ps	Spots	
1, 8 a. m.	0	0	1	25‡	0	0	2	25‡	Spots probably disappeared by solar rotation.
3, 7 p. m.	0	0	1	20‡	0	0	1	2	Do.
4, 8 a. m.	1	4	0	0	1	4	2	6	
5, 10 a. m.	0	0	0	0	0	0	2	6	
6, 7 a. m.	0	0	0	0	0	0	2	5	
7, 8 a. m.	2	6	1	1	1	3	3	10	
8, 8 a. m.	2	20‡	0	0	1	10‡	4	30‡	
9, 6 a. m.	0	0	0	0	0	0	4	20‡	Spots mostly very small.
12, 9 a. m.	0	0	0	0	0	0	4	15‡	Do.
13, 8 a. m.	0	0	0	0	0	0	3	12‡	
14, 2 p. m.	0	0	0	0	0	0	2	7	
15, 7 a. m.	1	2	0	0	1	2	3	9	
17, 8 a. m.	3	7	0	0	3	7	6	13	Spots probably reappeared by solar rotation.
19, 12 m	0	0	0	0	0	0	5	10	
20, 8 a. m.	1	2	1	2	1	2	4	8	
21, 11 a. m.	0	2	0	0	0	2	3	9	
22, 3 p. m.	0	0	0	0	0	0	2	6	
24, 12 m	2	6	0	0	0	0	4	12	
25, 11 a. m.	1	10‡	1	1	0	0	4	20‡	Broad areas of faculæ.
26, 9 a. m.	0	20‡	0	0	0	0	4	40‡	Do.
27, 8 a. m.	1	4	1	4	0	0	4	40‡	Do.
28, 8 a. m.	1	20‡	0	0	0	0	5	60‡	
29, 8 a. m.	1	15‡	0	5	1	5	6	70‡	
30, 8 a. m.	0	10‡	0	0	0	5	6	80‡	
31, 10 a. m.	0	10‡	0	5	0	0	6	85‡	

Faculæ were seen at the time of every observation. ‡Approximated.

Mr. William Dawson, of Spiceland, Indiana, reports having observed sun spots during August, as follows:

4th.—Three groups, eight spots.

6th.—Two groups, seven spots.

7th.—Four groups, fourteen spots.

11th.—Five groups, twenty-three spots.

12th.—Five groups, thirty-three spots, mostly on the eastern hemisphere. A spot of moderate size, with fine penumbra, was observed in the southeastern quadrant.

18th.—Seven groups, twenty-one spots.

20th.—Four groups, seven spots.

22d.—Three groups, forty spots; one long scattering group toward the west side.

24th.—Six groups, thirty spots; one large spot in the southeastern quadrant.

27th.—Five groups, eighty-five spots; one large group in northwest quadrant, and one large spot in the southwest quadrant.

28th.—Five groups, eighty-five spots.

30th.—Six groups, one hundred and fifteen spots; one row of groups south of equator.

Mr. T. C. Hunter, at Wabash, Indiana, reports that a large number of sun spots were observed by him during August, the month closing with fourteen spots of good size still visible on the sun. They were seen on every clear day after the 10th.

Mr. H. D. Gowey, at North Lewisburg, Ohio, reports that sun spots were seen on all clear days during the month. They were most numerous on the 31st; least numerous on the 3d; smallest on the 4th, and largest on the 30th and 31st.

METEORS.

Savannah, Perry county, Illinois.—On the 2d, at about 9 p. m., a large meteor passed southward along the "milky way" leaving a brilliant trail, from 30° to 40° in length. A few minutes after midnight of the 11th, four shooting stars were seen within ten minutes. On the 16th a very large meteor was seen in the southeastern sky, which exploded, and was followed by three loud detonations. On the evening of the 27th three meteors were seen within twenty minutes.

Cairo, Illinois.—A bright meteor, of yellowish color, leaving a trail 20° in length, was observed at 9.30 p. m. of the 4th. Another meteor, of similar appearance, was seen at 9.35 p. m., and between 9 and 10 p. m., of the same date, about twenty-five meteors were seen. Numerous meteors were also observed at this station on the evening of the 5th, between 8 and 10 p. m.

New London, Connecticut.—A large number of shooting